Some observations of a Saunders Case Moth *Metura elongatus* larva

Introduction

Saunders Case Moth *Metura elongatus* is a member of the family Psychidae, of which there are about 350 species in Australia (Zborowski and Storey 2003). In the caterpillar stage, this insect uses caterpillar silk to construct an elongate, spindle-shaped case, to which it attaches short lengths of slender twigs at widely spaced intervals. The front part of the caterpillar is orange and black, while the rear part is cream-coloured. Before pupation, the caterpillar attaches its case to a secure support by a tough band of silk, then turns around inside the case and pupates head downwards. If it is a male, the moth emerges the following spring; if female, the insect is a wingless, grub-like creature that remains in the case, where she is fertilised by the male, which has an extensile abdomen to make this possible. Eggs are laid in the case, and when the larvae hatch they use silken threads to lower themselves on to foliage before constructing conical silken caps for protection. (Common 1990; McKeown 1944; Zborowski and Storey 2003).

Under normal circumstances, the rear end of the larva is not seen because it is kept inside the case at all times (Coffs Harbour Butterfly House web site). This note gives an account of a circumstance in which the rear end of a larva protruded from its case, and of subsequent events.

Apparent drowning

At 10.45 am on 21 March 2010, I saw a Saunders Case Moth case lying on the concrete near a dwarf *Banksia spinulosa* at the back of our house. I picked up the case and put it on an old table outside the back door, intending to examine it later. The case felt very light. The head end was wide open, and I expected the case to be empty.

At about 3.00 pm I found the case in a bucket of 'grey' water that was under the table: no doubt the case had been carried there by a gust of wind. I don't know how long it had been in the water, but the case was very wet and mostly submerged. The previously open head end was closed, and the pale rear section of the caterpillar was protruding from the other end (Fig. 1). The creature was motionless and apparently had drowned. I put the case with its unfortunate occupant on a sheet of cardboard that was lying on the table, and emptied the bucket to prevent any further mishap. At 5.00 pm the case was still on the table, but the caterpillar's rear end was no longer visible.

Subsequent movements

The following morning at 8.00 am the case, now dry, had moved and was firmly attached to the edge of the table with caterpillar silk (Fig. 2). By 1.00 pm the case had moved again. The orange and black head end of the caterpillar was visible as the creature moved slowly along the edge of the table (Fig. 3). After photographing it, I placed it under the *Banksia spinulosa*, where I later saw it climbing up one of the branches.

Fig. 1. Wet case with rear end of caterpillar protruding.

On 28 March I discovered that the caterpillar had climbed a pole of the patio close to the *Banksia*. I watched it proceed up to the laserlite roof, where it lost its grip and fell off. Again the head end of the case was open, and the caterpillar was not visible, so I suppose this was a repeat of what had happened before I first found it. On 29 March the caterpillar, possibly exhausted from its ordeal, next opted to secure itself in a position about halfway up the pole. It remained there for eight months, emerging as an adult male moth on the night of 30 November.

Discussion

The case in water

I wondered how the caterpillar had managed to survive in the water. Ian Endersby (pers. comm.) suggested that it would have closed its spiracles. I don't know how long an insect can do this before it has to breathe. Perhaps the caterpillar used its rear end to block the opening in the case and prevent water from entering?

Size of the case

Cases of female Saunders Case Moths are 12 to 15 cm long (Queensland Museum fact sheets web site), and are larger than those of males. This case was 9.5 cm long, not counting the length of the sticks. A part of the abandoned case is shown in the upper figure on the back cover. This creature was fortunate; success is by no means certain because these caterpillars are frequently parasitised by flies and wasps (Brewster *et al.* 1920). A case containing a larva that died before completing pupation is shown in the lower figure on the back cover. In this instance the cause of death is not known.

The only other Saunders Case Moth larva I have seen in our garden was here in June 1992, also near our dwarf *Banksia spinulosa*.

References

Brewster MN, Brewster AA and Crouch N (1920) *Life stories of Australian insects.* (Dymock's Book Arcade: Sydney)

Coffs Harbour Butterfly House web site http://lepidoptera.butterflyhouse.com.au/psyc/elong.html

Common, IFB (1990) *Moths of Australia.* (Melbourne University Press: Melbourne)

McKeown KC (1944) *Australian insects: an introductory handbook.* (Royal Zoological Society of New South Wales: Sydney)

Queensland Museum fact sheets web site www.qm.qld.gov.au/inquiry/factsheets/case_moths_20080709.pdf

Zborowski P and Storey R (2003) *A field guide to insects in Australia.* 2nd edn. (Reed New Holland: Sydney)

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Fig. 2. Case attached to table with caterpillar silk.

Fig. 3. Larva moving along edge of table.

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